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News Release

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South Carolina to begin working on the world's first biological heart pacemaker with recruitment of international expert in cardiac electrophysiology

BlueCross BlueShield of South Carolina Foundation awards $5 million to support newly established endowed chair

COLUMBIA, SC, March 25, 2008 -- South Carolina will soon begin working on the world's first tissue-derived human heart pacemaker with the recruitment of internationally acclaimed researcher, Dr. Martin Morad. The announcement was made today at a press conference at the State House hosted by Health Sciences South Carolina (HSSC).

Dr. Morad has been named the BlueCross BlueShield of South Carolina Endowed Chair in Cardiovascular Health, a new chair in the HSSC Center of Economic Excellence for Regenerative Medicine. The BlueCross BlueShield of South Carolina Foundation has pledged $5 million to support the endowed chair, which includes a unique three-way faculty appointment at the University of South Carolina (USC), the Medical University of South Carolina (MUSC) and Clemson University.

Dr. Morad's recruitment is part of the South Carolina Centers of Economic Excellence (COEE) Program, a state initiative that grants awards to South Carolina's three research universities to create Centers of Economic Excellence (CoEEs), along with endowed professorships, in technology-related fields that are likely to enhance the state's economy. Each state award must be matched dollar-for-dollar with funds from private, federal or municipal sources.

An expert in "excitation contraction coupling," an area of cardiac calcium signaling, Dr. Morad focuses his research on the complex interactions and signaling that regulate heart function. Working on a molecular level, he is seeking to understand the calcium signaling events that are responsible for cardiac contraction and set the heart's rhythm and why when the heart's calcium signaling mechanisms fail, they cause arrhythmias and death. Understanding this process may lead to new therapeutic approaches to treat congestive heart failure and other cardiac pathologies, including the possible creation of a biological pacemaker derived from genetically engineered cells.

Speaking on behalf of HSSC partners Clemson University, MUSC, USC, Greenville Hospital System University Medical Center, Palmetto Health, and Spartanburg Regional Healthcare System, HSSC President and CEO Jay Moskowitz said the recruitment of a researcher of Dr. Martin Morad's international stature will be a boon to South Carolina's reputation, its research universities, its clinical enterprise, its economy, and to its citizens, a population disproportionately affected by heart disease.

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"This proves what a tremendous magnet for talent South Carolina and Health Sciences South Carolina has become, thanks to the vision of our General Assembly in its creation and funding of the CoEE Program. For Dr. Morad to leave a prestigious appointment at Georgetown University in favor of Clemson, MUSC, and USC is a tremendous affirmation. We are honored that the BlueCross BlueShield of South Carolina Foundation has chosen to invest $5 million to support Dr. Morad's endowed chair. This investment in South Carolina's intellectual infrastructure and the CoEE Program is absolutely critical to our state's ability to compete in the global economy," Moskowitz said.

M. Edward Sellers, chairman and CEO of BlueCross BlueShield of South Carolina, awarded the grant on behalf of the company's Foundation, stating, "The BlueCross BlueShield of South Carolina Foundation is honored to be able to establish the BlueCross BlueShield of South Carolina Endowed Chair in Cardiovascular Health with a $5 million grant. Our Foundation has been seeking an opportunity that simultaneously supported a CoEE endowed chair in a health-related field and involved all three research universities in South Carolina. This is a wonderful, unique opportunity that meets both of these criteria."

Sellers went on to say that the CoEE Program has established research centers that focus on health care issues that threaten all South Carolinians, including stroke, heart failure, cancer, mental health, patient safety, and aging. "Dr. Morad's research, in particular, has the potential to benefit the wellbeing of all South Carolinians. His work in developing a biological pacemaker also has great commercial viability as a replacement for current pacemaker technology made from artificial materials," he said.

Morad's recruitment to South Carolina was years in the making, said MUSC President Ray Greenberg. "The recruitment of Dr. Morad started with colleague-to-colleague scientific discussions with Drs. Roger Markwald (MUSC) and Tom Borg (USC). It was their excitement about the opportunities to work together, combined with the endowed chair in the Regenerative Medicine CoEE and the financial support of the BlueCross Foundation that sealed the deal. I could not be more thrilled about the opportunity to recruit such a distinguished scientist and wonderful human being to South Carolina."

Research in the field of biological pacemakers is rapidly growing, particularly in the area of genetically engineered cells that may help pace the heart. They are viewed as a possible alternative to electronic pacemakers that save lives, but require regular maintenance and do not readily respond to the demands of exercise and emotion.

In his new role, Dr. Morad will work in close collaboration with the USC School of Medicine in the area of cell biology, MUSC in the areas of cardiology, cardiac development and cell biology; and Clemson in the areas of tissue engineering and scaffolding. Dr. Morad has maintained a lab at Mount Desert Biological Labs in Maine for 35 years, where he has cloned genes from marine species and has introduced them in mammalian hearts in an attempt to prevent arrhythmias associated with cardiac failure. Many opportunities for collaborative research across the three universities exist, which played a major role in Dr. Morad's coming to South Carolina.

USC, MUSC and Clemson plan to utilize Dr. Morad's experience, intellect and research across the state, said USC President Andrew Sorensen. "When you get something truly wonderful, it's human nature to want to keep it all to yourself. That's not the case with Dr. Morad. Ray (Greenberg), Jim (Barker) and I plan to leverage his talent across all three of our universities. Not only does Dr. Morad complement the many talented researchers Clemson, USC, and MUSC have in the fields of bioengineering, biology, cardiology, cell anatomy, electrophysiology and regenerative medicine, he will serve as a critical intellectual spark for ground-breaking research, education, and commercial applications that such endeavors inspire."

Added Clemson President James Barker, "Having a scholar with Dr. Morad's experience and reputation in South Carolina will bring even greater visibility to this already outstanding group of researchers. We look forward to results that will offer new hope for those who suffer from cardiovascular disease."

Dr. Morad said he is excited about the unique opportunity in South Carolina. "On their own, Clemson, MUSC, and USC are excellent universities with exceptional people. Working in collaboration, they are a powerhouse of talent and are capable of life changing research. The opportunity to join people I respect in a visionary environment created by the State through the CoEE Program and advanced by Health Sciences South Carolina—it was

irresistible. What happened in California, Texas, and North Carolina in terms of world-class research can also happen here," he said.

When Dr. Morad comes to South Carolina this summer he will bring his research lab with him, which employs seven people. He also brings National Institutes of Health funding in excess of $2.2 million. The lab will be located at MUSC.

About Health Sciences South Carolina

Established in April 2004, Health Sciences South Carolina (HSSC) is a statewide public-private collaborative of universities and health systems possessing the shared vision of using health sciences research to improve the health and economic wellbeing of South Carolina. HSSC includes Clemson University, the Medical University of South Carolina, the University of South Carolina, Greenville Hospital System University Medical Center, Palmetto Health, and Spartanburg Regional Healthcare System. For more information, visit **www.healthsciencessc.org.**

About the CoEE Program

The South Carolina Centers of Economic Excellence Program was established by the South Carolina General Assembly in 2002 with $200 million appropriated from the South Carolina Education Lottery Account to fund the program through 2010. The legislation authorizes the state's three public research institutions—Clemson University, the Medical University of South Carolina and the University of South Carolina—to use state funds to create Centers of Economic Excellence (CoEE) in research areas that will advance South Carolina's economy. Each CoEE is awarded from $2 million to $5 million in state funds, which must be matched on a dollar-for-dollar basis with non-state funds. The program also supports CoEE endowed chairs, world-renowned scientists who leads the CoEEs. By investing in talent and technology, the CoEE Program is designed to fuel the state's knowledge economy, resulting in higher-paying jobs ad improved standard of living in South Carolina. For more information, visit www.sccoee.org.

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For publishable electronic photo of Dr. Morad, contact Lux + Associates at 803.376.1603 and a file will be emailed to you.